

# **A Future Anti-Access Environment**

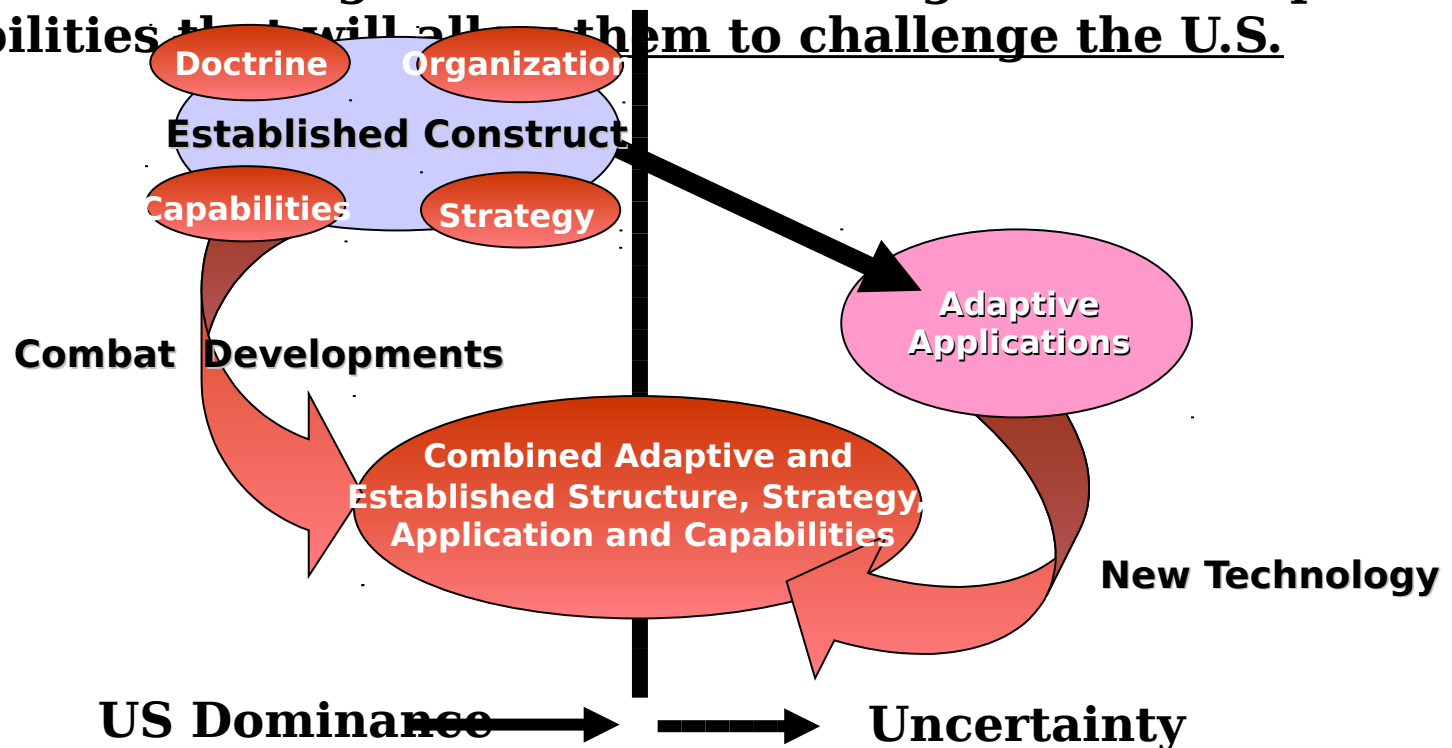
*A Common Strategy for Fighting the US  
Threat Construct*  
*Anti-Access Strategy & Capabilities*  
*Conclusions*  
*Discussion*



# The Common Strategy

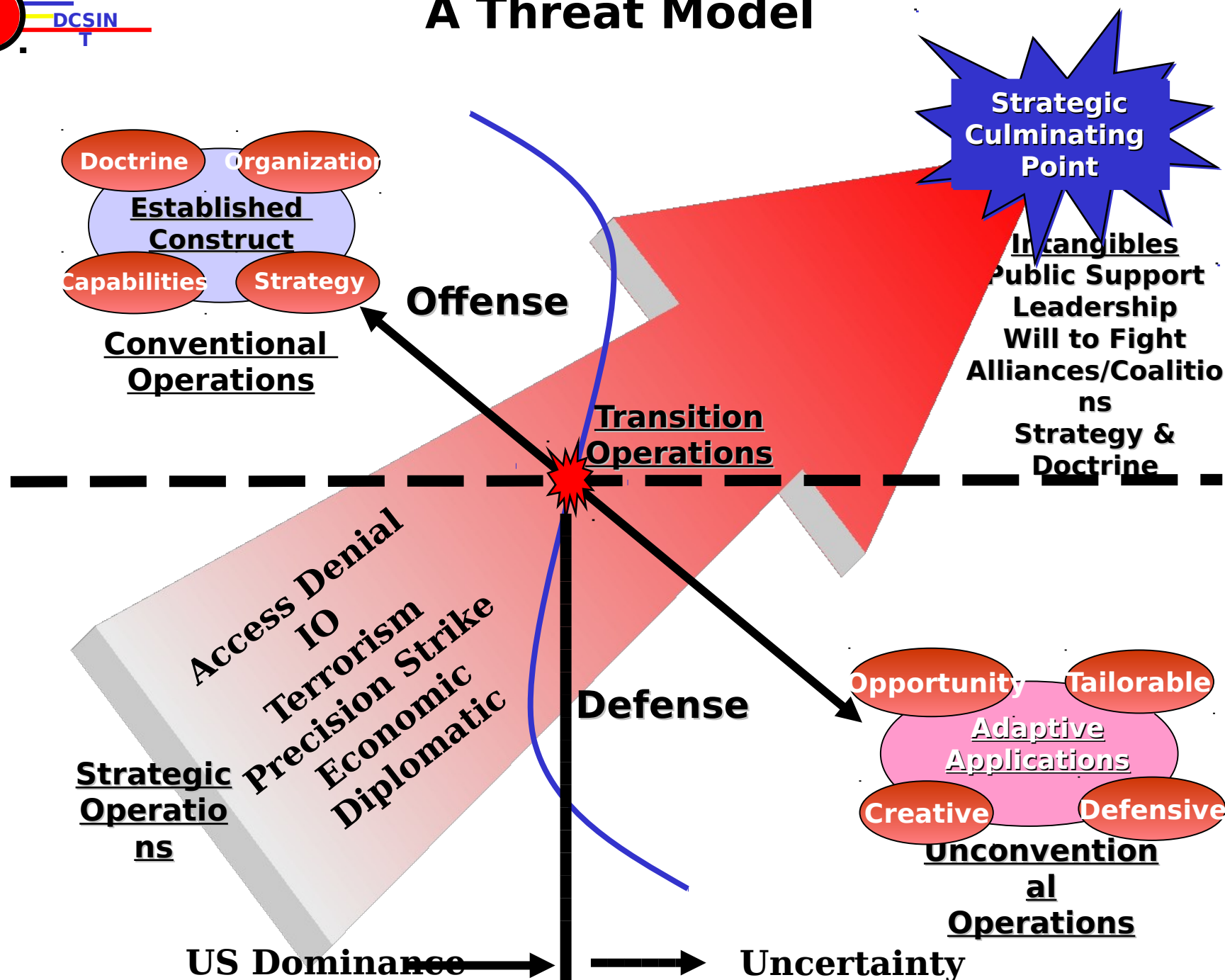
All Military Forces in today's world are constructed in accordance with established paradigms. In most cases, this construct is sufficient to meet national needs in regional settings against neighboring states. U.S. forces, with their technological, organizational and strategic capabilities, dominate conventional, regionally focused militaries. regionally focused militaries use conventional (adaptive) ways, means and ends

Nations with interests contrary to the US use asymmetrical designs and new technologies to develop capabilities that will allow them to challenge the U.S.





# A Threat Model





# Threat Capabilities

## Conventional Operations

### Internal Security

- Local, Regional, National & Secret Police
- Para-military Organizations
- Civilian Mobilization

### Regional Threats

- Armored and Mechanized Forces
- Long Range Artillery and Rockets
- Fixed and Rotary Wing Air Forces
- UAVs and Night Vision
- Medium Range Missiles
- Coastal Navy
- HUMINT/SOF

### Access Denial

IO

## Transition Operations

### Transition

- Engineers
- Pre-positioned - logistics
- Hardened C2
- Deception

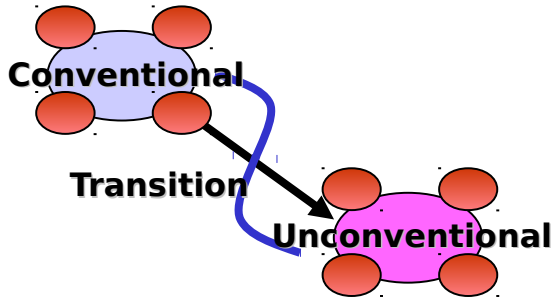
### Protecting Regional Gains

- Armored and Mechanized Forces
- Regional Police
- Rotary Wing Air Forces
- HUMINT/SOF

### Access Denial

- Air and Missile Defenses
- Theater Ballistic Missiles
- Chemical/ Biological Weapons
- HUMINT/SOF

## Strategic Operations



## Unconventional Operations

### Preservation

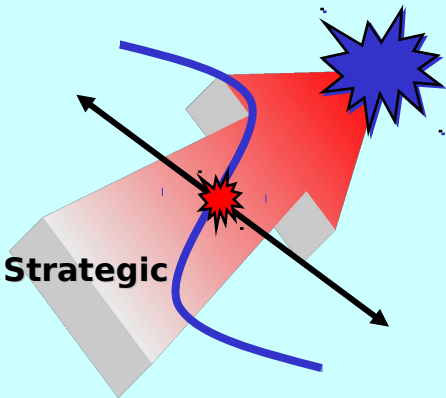
- Camouflage, Concealment, Cover Deception and Denial
- Redundant C2

### Access Denial

- Counter - precision, ISR & mobility

### Controlling the Conflict Environment

- All Elements of National Power
- Precision Fires & Recon Strike
- Mobile/ Mechanized Reserves
- Commercial Technical ISR



- Information Operations: EW, cyber-attack, protection and security
- Diplomatic initiatives
- Economic leverage
- Terrorist attacks
- Precision strike - TBM
- Weapons of Mass Effects

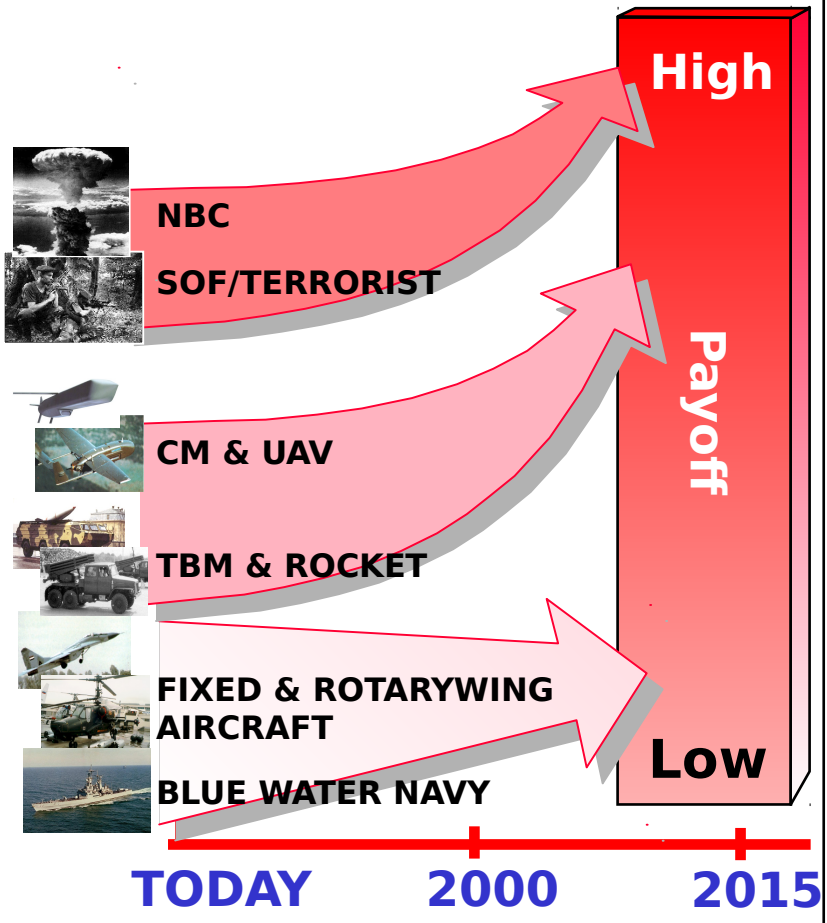


# Overall Threat Construct



# Future Anti-Access Threats

## CHANGING THREAT



## HOW IT'S CHANGING

*Applying Lessons Learned...  
Adoptive and Adaptive*

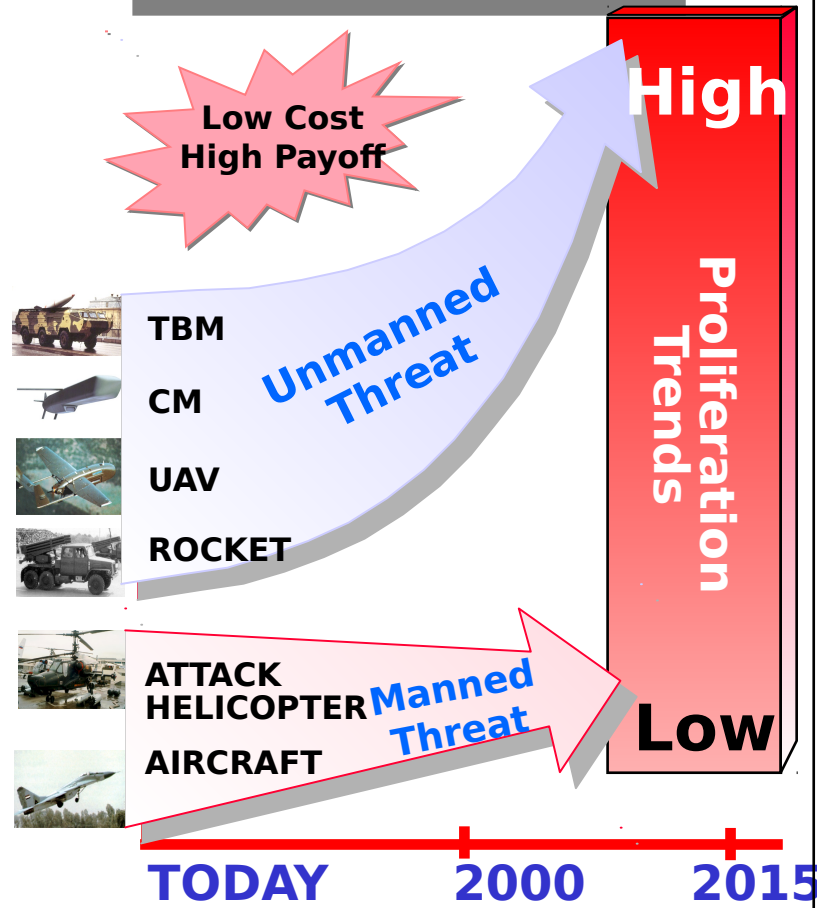
- NBC
- SOF/Terrorists
- TBM/Cruise/UAV
- Air and Missile Defenses
- Counter Precision & ISR
- Effective C4 & ISR
- Information Operations

- Maintain Threat of WME/D
- Allow No Sanctuary
- Cause Mass Casualties
- Maintain Exclusion Zone
- Operate in Complex and Urban Environments/CCD
- Leverage Commercial
- Influence World Opinion Attack Alliance & Coalition

**Characterized by Proliferation of Lower Cost Alternatives**

# General Air and Missile - Trends

## CHANGING THREAT



## HOW IT'S CHANGING

*Applying Lessons Learned...  
Adoptive and Adaptive*

*Emerging Capabilities*

*Emerging Strategies*

**GIVEN \$70M, ANY ADVERSARY COULD BUY...**



**Characterized by Proliferation of Low Cost, Unmanned Weapons**



# TBM - Trends

- ***Improved Accuracy/ Range***
- ***Increased Use Of Solid Propellant***
- ***Varied Warhead Options***
- ***Shorter Firing Sequence***
- ***Reduced Radar Cross Section***



## Strategies

Long Range Targeting  
Deny Theater Basing  
Mobile - Hard to find  
Reduce Requirement for Air Force

***TBMs are becoming the Poor Man's Air Force***









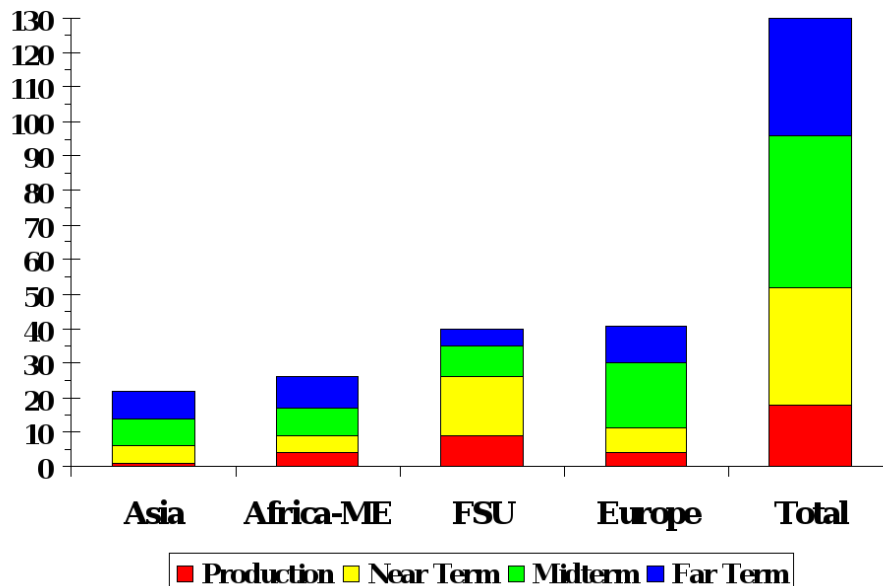
## *The Poor Man's TBM*



***MRLs Provide Capability To Deliver Long Range Precision Munitions  
without TBMs***

-  LASER GUIDED PROJECTILES PROLIFERATING RAPIDLY
-  FOUR NEW SENSOR FUZED MUNITIONS IN PRODUCTION
-  COURSE CORRECTED MUNITIONS COMMON
-  TERMINALLY HOMING MUNITIONS BEING TESTED

**Strategies**  
**Mobility**  
**Massed Effects**  
**Lethality..CML Capability**  
**Sanctuary Operation**

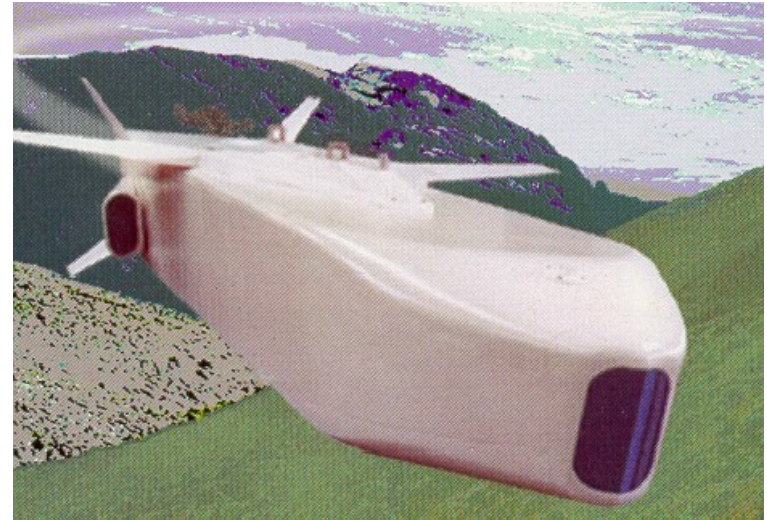


# Land Attack Cruise Missile - Trends

- **SMALLER SIZE**
- **INCREASED RANGE**
- **LOWER ALTITUDE FLIGHT**
- **IMPROVED ACCURACY**
- **FUTURE USE OF SMART SUBMUNITIONS**
- **POSSIBLE INCORPORATION OF COUNTERMEASURES**

## Strategies

**Long Range Attack**  
**Deny Theater Basing**  
**Reduce Air Force Requirement**  
**Precision Attack**  
**Low Cost**



- **Serious theater-level threat possible before 2005**
  - **At least 11 countries now developing LACMs**
  - **Majority of systems are subsonic**
  - **Simple LACMs could emerge quickly**
  - **Anti-ship cruise missile (ASCM) and UAV conversion**

**LACMS Can Strike Targets Across The Theater of Operations**

# UAV - Trends

## Attack UAV

### • TARGETS

- AIR DEFENSE RADARS
- ARMOR
- C2

### • PASSIVE SENSORS

- IR
- RF SEEKERS
- ACOUSTIC

### • SMALL WARHEADS

- HE - POSSIBLE CHEMICAL
- FRAG - POSSIBLE BIOLOGICAL

- *40 + countries developing/using UAVs*
- *Difficult to detect, track, and destroy*
- *UAVs are proven force multipliers*



## Strategies

Reduce Air Force Requirement  
Near Real Time Intelligence  
Degrade Digitized Battlefield  
Preserve Force

## Reconnaissance UAV



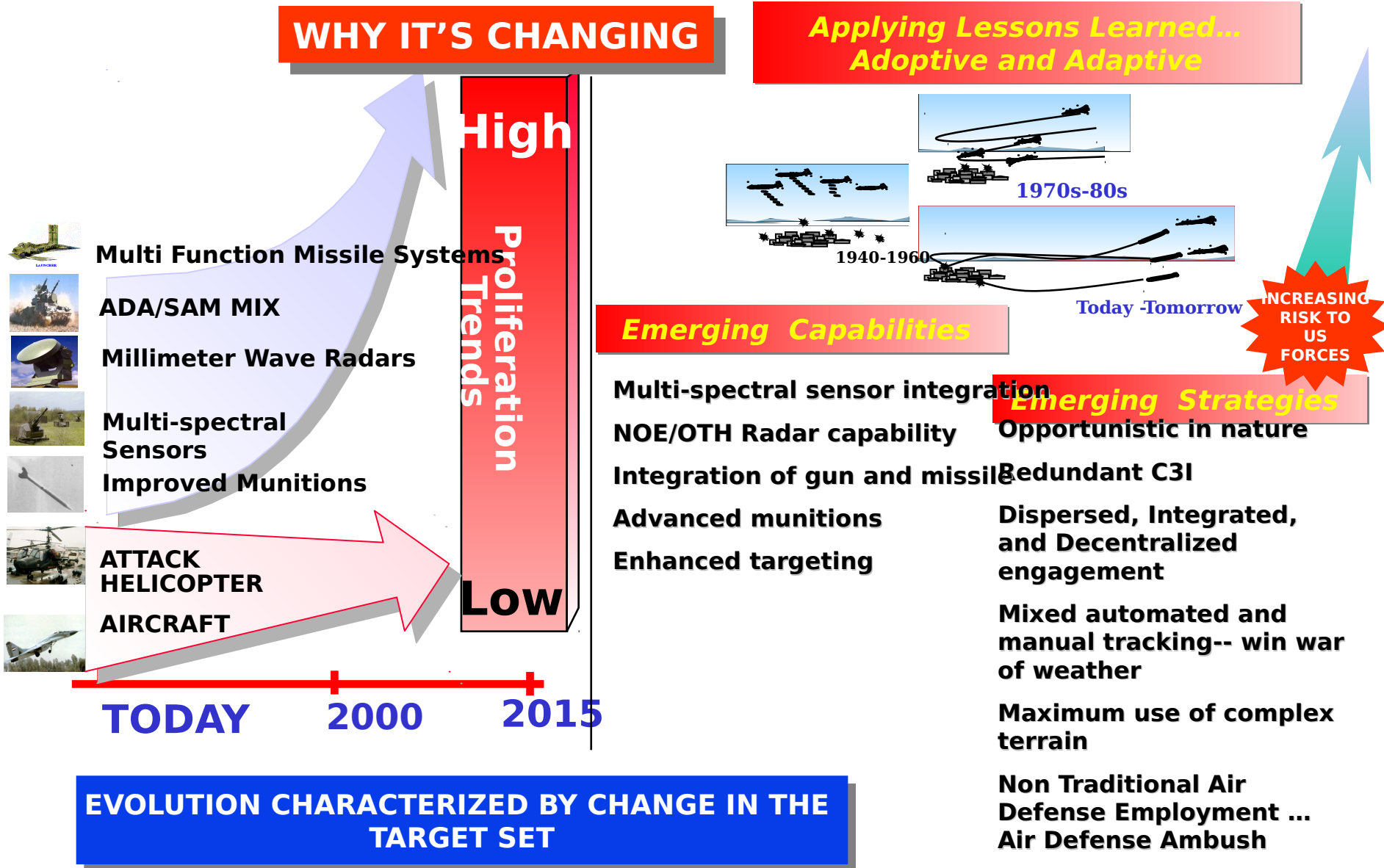
## Electronic Warfare UAV



Dispensing Jammer/EMP Burst

Dedicated Comms Jammer

# General Air Defense Trends (U)





# AD Radar Trends

- **Millimeter Wave**  
**Reduce Ground “Clutter”**  
**Hover detection**
- **Phased Array**
- **Low Probability Of Intercept**  
**Low peak power**  
**Frequency Modulated**  
**High Operating Frequency**
- **Advanced Signal Processing**



**Strategies**  
**Complimentary Systems**  
**Redundant**  
**Sensor Fusion**

# AD Missile Trends

- ***Dual Mode Seeker***
- ***Salvos***
- ***Multi-missile Guidance Capability***
- ***Target Priority TBM, Cruise Missile and Aircraft***
- ***Increased Range***



## **Strategies**

***Mobility***

***Target C2ISR***

***Increase Blue Air Stand-off***  
***Reduce Cruise Missile Threat***

# Tactical System Trends

- **Networked Systems**
- **Airburst Munitions**
- **Advanced Signal Processing**  
**Improved Clutter Processing**  
**Target Recognition**
- **Combination ADA/SAM Systems**
- **Sensor Integration**  
**Radar/EO**
- **All Weather Targeting**



## Strategies

**Passive Intercept**  
**Point Target Defense**  
**Air Defense Ambush**  
**Not Tied to Troops**



# Conclusions



Peer/Near-Peer Competitors

Distributed, Simultaneous Operations

Critical Vulnerable Space Links

Non-traditional Coalitions



Homeland Security

*... this Operational Environment highlights:*

- a wider spectrum of operations, increased unpredictability and a more **complex and challenging range of operating environments** ...

*... and adversaries that:*

- are **WATCHING, LEARNING and ADAPTING**
- will marginalize the strengths of our strategy by **placing force projection operations at risk**
- can accept - not losing - as a strategic goal
- are modernizing in light of late 20th Century lessons
- will change from conventional operations when threatened and pursue an asymmetric strategy



Regional Competitors

Asymmetric Threats



Noncontiguous Battlefield



Non-state Actors

Complex Terrain

Divergent Military Capabilities



Limited Existing Infrastructure



Unblinking World Media

Rapidly Changing Information Technology And Increased Information Demands



***Changing dynamic requires new and flexible military capabilities***



# Discussion

# MANPADS Trends

- ***Improved Radar and Infrared Guidance***
- ***Improved Seekers***
- ***Increased range***
- ***All Aspect engagement Capability***
- ***Increased Countermeasure Capability***



**Mistral**



**Stinger**

**Strategies**  
**Offensive**  
**Ambush**